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Orbit representations from matrices ☆

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ABSTRACT

Each Markov interval map f naturally produces a transition 0–1 matrix of interval type (in every row, the entries equal to 1 should be consecutive). We show that any 0–1 matrix A can be transformed into an interval type matrix A_I, by a careful use of the state splitting. We then prove that A_I can be realized as a transition matrix of an interval map $f_{A_I,\lambda_{A_I}}$ arising from the Perron–Frobenius eigenvalue λ_{A_I} and eigenvector of A_I. Finally, we construct orbit representations associated with A from those of A_I arising from the dynamical system $([0,1], f_{A_I,\lambda_{A_I}})$.

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